

**Claim Amendments:**

The claims of this application have been amended as shown in the following marked up version of the claims.

1. (Currently Amended) An anti-methyllysine antibody having all of the following five properties:

- (1) specific binding to dimethyllysine and monomethyllysine;
- (2) no binding to lysine;
- (3) stronger reactivity to dimethyllysine than reactivity to monomethyllysine;
- (4) ability to specifically recognize a methyllysine residue in a protein, which is not influenced by surrounding amino acid residues; and
- (5) ~~reactivity~~ reactivity to animal cell-derived histone and elongation factor 1a.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Previously Presented): The antibody according to claim 1, which is a polyclonal antibody.

6. (Previously Presented): The antibody according to claim 1, which is a monoclonal antibody.

7. (Previously Presented): A hybridoma producing an anti-methyllysine antibody, which is selected from the group consisting of MEK3D7 (Accession No. FERM P-19595), MEK4E10 (Accession No. FERM P-19596), MEK5F7 (Accession No. FERM P-19597), MEK2-5A11 (Accession No. FERM P-19593) and MEK2-5B11 (Accession No. FERM P-19594).

8. (Original): An anti-methyllysine mouse monoclonal antibody produced by the hybridoma of claim 7.

9. (Currently Amended): A process for producing the polyclonal antibody of claim 5, which comprises immunizing an animal with an antigen obtained by chemically methylating a ~~different protein of different species~~ and subjecting the resulting antibody to affinity purification with a protein obtained by chemically methylating a protein different from the antigen.

10. (Currently Amended): A process for producing the monoclonal antibody of claim 6, which comprises immunizing an animal with an antigen obtained by chemically methylating a

~~different~~ protein of different species and selecting a hybridoma secreting an antibody recognizing a protein obtained by chemically methylating a protein different from the antigen.

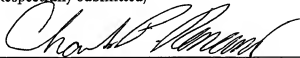
11. (Previously Presented): A method of detecting a methylated protein, which comprises using the antibody of claim 1.

12. (Previously Presented): A method of detecting a methylated protein, which comprises using the antibody of claim 5.

13. (Previously Presented): A method of detecting a methylated protein, which comprises using the antibody of claim 6.

14. (Previously Presented): A method of detecting a methylated protein, which comprises using the antibody of claim 8.

Respectfully submitted,



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